



ECONOMIC & GOVERNMENT REVENUE IMPACTS

Australian Paper

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ECONOMIC AND GOVERNMENT REVENUE IMPACTS

EXECUTIVE SUMMARY

Australian Paper is a vertically integrated manufacturer of pulp, paper, envelopes and stationery. The organisation is Australia's only manufacturer of office and printing papers, bag, sack, lightweight packaging and industrial papers, and is also a major supplier of Kraft liner board and the largest envelope manufacturer in Australia.

The Western Research Institute (WRI) was commissioned by Australian Paper to measure its impact on the national, state and regional economies in 2015. The economic impacts were assessed using primary data provided by Australian Paper. National, state and regional input-output tables were developed and analysed using marginal coefficients. The impacts were measured in terms of gross domestic, state and gross regional product, household income and full-time equivalent (FTE) jobs. The results are summarised below.

Overall Impact of Australian Paper

When flow-on effects are taken into account, the combined economic impacts of Australian Paper operations and capital expenditure contributed:

- \$911 million in gross domestic product,
- \$494 million in household income; and
- 5,786 FTE jobs.

The economic impact of Australian Paper in the Australian and Victorian economy in the 2015 calendar year is shown in the table below.

Overall Aggregated Impacts Australian Paper	Value Added \$m	Household Income \$m	Employment FTE Jobs
Australia (including flow-on)	\$911.2	\$494.7	5,786
% of Australia	0.1%	0.1%	0.1%
Victoria (including flow-on)	\$819.1	\$440.6	5,576
% of Victoria	0.2%	0.3%	0.2%

- In Victoria, Australian Paper's overall impact is estimated to have contributed (including flow-on effects);
- \$819 million in gross state product;
- \$440 million in household income; and
- 5,576 FTE jobs.

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The main industry sectors, as defined in the 2006 Australian and New Zealand Standard Industrial Classification (ANZSIC), benefiting from the flow-on of Australian Paper operations, in terms of full-time equivalent (FTE) employment, were:

- Transport, postal and warehousing (483 FTE);
- Personal and other services (397 FTE);
- Professional, scientific and technical services (363 FTE);
- Retail trade (360 FTE); and
- Wholesale trade (289 FTE).

Overall Impact of the Maryvale Mill

The economic impacts of the Maryvale Mill operations and capital expenditure on Australia, Victoria, and the Latrobe Valley are shown in the table below.

Overall Impacts Maryvale Mill	Value Added \$m	Household Income \$m	Employment FTE Jobs
Australia (including flow-on)	\$753.4	\$359.6	4,305
Total (Incl. flow-on)	\$741.8	\$353.2	4,234
% of Victoria	0.2%	0.2%	0.2%
Total (incl. flow-on)	\$451.9	\$216.5	2,387
% of Latrobe Valley	6.8%	7.9%	5.5%

In Australia, Maryvale Mill is estimated to have contributed:

- \$753 million in gross domestic product;
- \$359 million in household income; and
- 4,305 FTE jobs when flow-on effects were taken into account.

In Victoria, Maryvale Mill is estimated to have contributed:

- \$741 million in gross state product in Victoria;
- \$353 million in household income; and
- 4,234 FTE jobs when flow-on effects were taken into account.

ECONOMIC AND GOVERNMENT REVENUE IMPACTS

In the Latrobe Valley¹ region, the Maryvale Mill contributed:

- \$451 million in gross regional product;
- \$216 million in household income; and
- 2,387 FTE jobs when flow-on effects were taken into account.

The main industry sectors that benefitted from flow-on employment in the Latrobe Valley region, as a result of the Maryvale Mill, were:

- Agriculture, Forestry and Fishing (197 FTE);
- Electricity, gas, water and waste services (182 FTE);
- Personal & Other Services (135 FTE);
- Health and community services (126 FTE); and
- Transport, Postal and Warehousing (125 FTE).

Overall Impact of Preston Operations

The economic impacts of operations and capital expenditure of Preston operations nationally and in Victoria are shown in the table below.

Overall Impacts Preston Operations	Value Added \$m	Household Income \$m	Employment FTE Jobs
Victoria (including flow-on)	\$178.3	\$9.1	109

In Victoria, Preston Operations is estimated to have contributed:

- \$178 million in gross state product in Victoria;
- \$9 million in household income; and
- 109 FTE jobs to the state economy.

¹ Latrobe Valley Region encompassing the statistical areas level 3 of Baw Baw, Latrobe Valley and Wellington as requested by Australian Paper.

AUSTRALIAN PAPER

Overall Impact of the De-Inking Plant

The economic impact of the De-Inking Plant (DiP) operations and capital expenditure on the national, state and regional economies is shown in the table below.

Overall Impacts De-Inking Plant	Value Added \$m	Household Income \$m	Employment FTE Jobs
Victoria (incl. flow-on)	\$71.5	\$17.2	218
Latrobe Valley (incl. flow-on)	\$49.1	\$6.6	82
% of Latrobe Valley	0.7%	0.2%	0.2%

In Victoria, DiP operations and capital expenditure contributed:

- \$71 million in gross state product;
- \$17 million in household income; and
- 218 FTE jobs in Victoria

In the Latrobe Valley region, the De-Inking Plant operations and capital expenditure contributed an estimated:

- \$49 million in gross regional product;
- \$6 million in household income; and
- 82 FTE jobs in the Latrobe Valley region.

The main industry sectors impacted by the flow-on from the DiP operations in terms of FTE employment in the Latrobe Valley region were:

- Personal and other services (4 FTE);
- Electricity, gas, water and waste services (3 FTE);
- Health and community services (2 FTE);
- Retail trade (2 FTE); and
- Hospitality Services (3 FTE).

ECONOMIC AND GOVERNMENT REVENUE IMPACTS

Contribution to Government Revenue

Australian Paper has provided WRI with data and information regarding contributions to government revenue. Australian Paper contributed approximately \$156 million in government payments (excluding indirect taxes or flow-on effects) in 2015. This amount is split across the following contributions:

- personal GST was \$4.6 million;
- employee withholding amounts was \$41.6 million;
- superannuation tax was \$1.7 million;
- fuel excise was \$0.76;
- EPA and licensing was \$0.73;
- property rates and taxes were \$1.8 million;
- import duties were \$0.08;
- payroll tax was \$7.4 million;
- fringe benefit tax was \$1.4 million;
- WorkCover payments were \$0.25;
- Government purchases were \$44.5 million;
- HVP rates were \$1.5 million; and
- Gas, calcium carbonate and starch inputs were \$49.6 million.

Australian Paper contributed a total of \$452 million in taxes (includes indirect taxes and flow-on effects) for the year 2015 and produced a total of 600,433 tonnes of paper. Australian Paper's national contribution to government revenues is equivalent to \$753 per tonne or \$1.88 per ream of paper produced, and in terms of state contributions \$732 per tonne or \$1.83 per tonne in Victoria.

INTRODUCTION

Australian Paper is a vertically integrated manufacturer of pulp, paper, envelopes and stationery. The organisation is Australia's only manufacturer of office and printing papers, bag, sack, lightweight packaging and industrial papers, and is also a major supplier of Kraft liner board and the largest envelope manufacturer in Australia.

Australian Paper has engaged WRI in past projects to measure the organisation's economic impacts in 2012 and 2013. The company now wishes to update these findings to understand the economic impact of its Preston operations, Maryvale Mill, and De-Inking Plant (DiP) for the 2015 calendar year. Specifically, the scope of the work required WRI to prepare an assessment of the:

- Economic impacts on Australia from Australian Paper's overall total of operations and capital expenditure;
- Economic impacts on Australia from Maryvale Mill's operations and capital expenditure;
- Economic impacts on Victoria from Australian Paper's overall operations, Maryvale Mill, Preston and DiP operations and capital expenditure;
- Economic impacts on the Latrobe Valley region from the Maryvale Mill and DiP operations and capital expenditure.

In addition, the report examines Australian Paper's economic contribution to Government revenue in terms of direct inputs such as payroll and associated employment withholding taxes, fuel excise, environmental and resources procurement (water and timber products). Included in the study is the estimation of contribution to HVP rates, total Australian Paper fuel excise for timber transport and the contribution to government revenue from gas, calcium carbonate and starch inputs. Contributions to government revenues have been calculated in terms of indirect and flow-ons nationally and for the state of Victoria.

METHODOLOGY

The economic impacts were assessed at the national, state and regional level. Modelling was undertaken through input-output analysis, which provides a detailed picture of the structure of an economy at a point in time, and can be used to estimate the contribution or impact of a particular sector of the economy or an individual organisation including flow-on or multiplier effects. The impacts are measured in terms of gross domestic, gross state and gross regional product, household income and full-time equivalent jobs. All impacts are expressed in either dollar terms or full-time equivalent employment terms and as a percentage of the national or relevant state or regional economy.

Constructing the Tables

The input-output table for this project was extracted from the Australian Bureau of Statistics (ABS) 2012-13 national input-output table using the Generation of Regional Input-Output Tables (GRIT) technique. The national table was adjusted to represent Victoria using detailed ABS data from the 2014-15 publications State Accounts (ABS cat no. 5220.0) and Labour Force, Australia, Detailed Quarterly (ABS cat. no. 6291.0.55.003). Subsequently a regional table was built for the Latrobe Valley Region (aggregation of SA3 regions) using total employment data sourced from the 2011 ABS Census and the proportion FTE and growth rates calculated from the ABS Labour Force Catalogue, Employed Persons by Region, Sex & Industry, using the most appropriate Labour Force Region data (ABS Cat. No. 6291.0.55.003). These adjustments provide base tables for the 2014-15 financial year.

The GRIT technique derives regional input-output tables from the national input-output table using location quotients and superior data, such as primary survey data (in this case, information regarding the operations of Australian Paper as well as regional employment and income data), at various stages in the construction of the tables. Appendix 1 provides more detail about input-output analysis.

Geographical Scope

Australian Paper's economic impact for Maryvale Mill and De-inking Plant operations were assessed at the state level and at the regional level where the Maryvale Mill and De-inking Plant are located. For the purpose of this report the Latrobe Valley region is the aggregation of statistical area level 3 regions from the Australian Statistical Geographical Standard (ASGS). Table 1 outlines the definitions of broader regions discussed in this report for the Gippsland and Latrobe Valley regions.

The Latrobe Valley region has been defined by Australian Paper as the aggregation of Baw Baw, Latrobe Valley and Wellington statistical area level 3.

Table 1: Broader Region Definitions

Broader Regions	Statistical Area Level	State within which the Latrobe Valley region is located
Latrobe Valley	Baw Baw (SA3)	Victoria
	Latrobe Valley (SA3)	
	Wellington (SA3)	

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Data collection

The national input-output table includes only one sector for all Pulp, Paper and Converted Paper Product Manufacturing. In order to estimate the economic contribution of Australian Paper operations, WRI was supplied with detailed information about the company's expenditure, location of expenditure, employment, and revenues. This information was used to construct a new sector in the input-output table representing the operations of Australian Paper. The original Pulp, Paper and Converted Paper Product Manufacturing sector was then deflated by the proportion represented by Australian Paper's output.

Revenue

Revenue data was supplied by Australian Paper and was allocated to the region from which it paid i.e. within the relevant state or statistical area or from outside the local area. Revenue was allocated to industry sectors utilising the same method conducted in the 2012 study. Any income made within the area of interest is considered to be 'local' and revenue received outside of the local area is deemed to be an export to the region.

Wages and Salaries

Human resource information including number of full-time employees (FTE) and associated wages and salaries for the calendar year 2015 was supplied by Australian Paper.

Other Expenditure

Australian Paper has supplied information regarding other expenditure made during 2015 by type and location where the purchase was made. Expenditure was allocated to industry category utilising the same method conducted in the 2012 study. Any expenditure made within the region being modelled is considered to be 'local' and anything made outside of this area is deemed to be an import to the region.

Capital Expenditure

Australian Paper has supplied information regarding capital expenditure during 2015 by type of expenditure and the location where the purchase was made. This one off capital expenditure was treated as a final demand impact in the relevant tables.

Impact Analysis

Industry Significance

Input-output tables are frequently used to provide estimates of the significance of a particular industry or organisation in terms of its contribution to the economy. This is done by examining the effects of the organisation shutting down and ceasing all economic activities. This method provides an estimate of the level of economic activity that can be attributed to that particular organisation, in this case Australian Paper.

Final Demand Impacts

The final demand impact analysis calculates the impacts (measured by output, value added, household income and employment) across all sectors in response to changes in industry final demands. Specifically, expenditure was allocated to the relevant sectors to give the estimated impacts of this expenditure including both initial and flow-on effects.

Reporting

The economic impact of Australian Paper operations including Preston, Maryvale Mill, the De-Inking Plant and warehousing operations has been reported as the sum of:

- Initial impacts: defined as the value of the immediate changes in the respective region as a result of the Australian Paper operations; and
- Flow-on impacts: defined as the value of changes in the regional economy in the course of an additional round of spending after the initial impact occurred.

The impact of Australian Paper on each of the study areas was estimated in terms of:

- Value added: the amount by which the value of an article is increased at each step of its production, exclusive of its initial cost. Value added is equal to gross output minus intermediate inputs and is equivalent to the contribution to gross regional product (GRP - the local equivalent of gross domestic product). That is, value added is the difference between the costs of production (excluding the compensation of employees, gross operating surplus, taxes and imports) and the value of sales turnover. Value added sums the value added components of production through the supply chain, while initial expenditure includes multiple counting of expenditure through the supply chain. Value added is the most reliable measure of the actual value of production.
- Income: measuring the benefit received by regional households from economic activity. It typically refers to compensation of employees but can also include income in return for productive activity such as the gross mixed income of unincorporated enterprises, gross operating surplus on dwellings owned by persons, and property income receivable and transfers receivable such as social assistance benefits and non-life insurance claims.
- Full-time equivalent employment: a measure of the workload of an employed person in a given location that makes workloads comparable across different types of employment (part-time, full time and casual).

Comparison with previous studies

Direct comparison between the results found in this economic impact assessment of Australian Paper and its entities and previous studies should be treated with caution for a number of reasons including:

- The assessment undertaken for the 2011 calendar year used 2007-08 national input output table as the base as well as National and State Accounts for 2010-11. The current assessment for the 2015 calendar year used the 2012-13 national input-output tables as the base as well as the 2014-15 National and State Account;
- Advances in economic modelling procedures; and
- The previous study used the Australian Standard Geographical Classification (ASGC) developed by the Australian Bureau of Statistics (ABS) to define the statistical divisions at the regional level. In July 2011 this was changed and the Australian Statistical Geographical Standard (ASGS) was implemented. The implication here is that the statistical area of the Gippsland region in the past report was the sum of East Gippsland and Gippsland whereas in this study the combined area is now called Latrobe-Gippsland. There is minimal difference between the ASGC and the ASGS, however some minor impacts on comparability could be expected. See Figure 1 below and Figure 2 overleaf for graphical representation.

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Figure 1: Australian Standard Geographical Classification prior to 2011

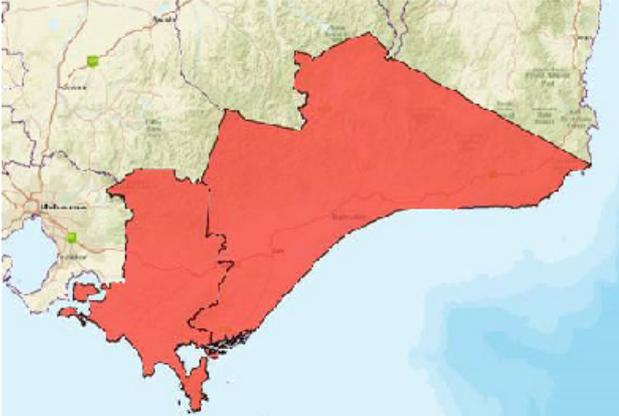
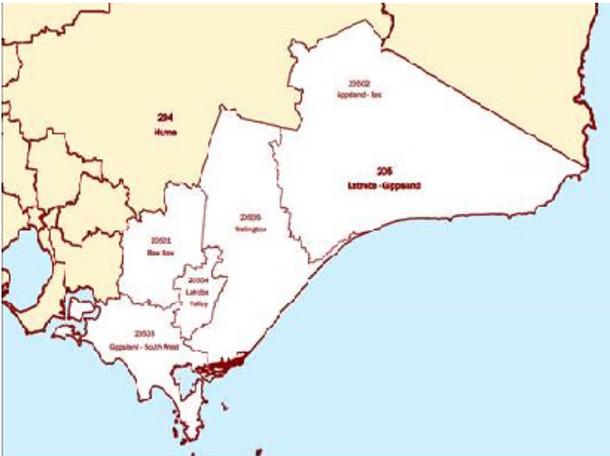


Figure 2: Australian Statistical Geographical Standard 2011



All results reported are estimates based on data provided by Australian Paper and the adopted modelling methodology.

THE ECONOMIC IMPACT OF AUSTRALIAN PAPER

1. AUSTRALIAN PAPER

Australian Impacts

Aggregating the impacts of operations and capital expenditure in 2015, Australian Paper contributed \$911 million to gross domestic product and 5,786 FTE jobs nationally when flow-on effects were taken into account.

In 2015, Australian Paper operations and capital expenditure contributed 0.1 per cent of gross domestic product, 0.1 per cent of household income and 0.1 per cent of FTE employment in the Australian economy when flow-on effects were taken into account.

Table 2 summarises these impacts below.

Table 2: Economic Impact of Australian Paper in Australia, 2015

Aggregated Impacts Australia	Value Added \$m	Household Income \$m	Employment FTE Jobs
Australia (including flow-on)	\$911.2	\$494.7	5,786
% of Australia	0.1%	0.1	0.1%

Overall, the operations and capital expenditure of Australian Paper, including flow-on effects, contributed to the Australian economy in 2015:

- \$911 million in gross domestic product;
- \$494 million in household income; and
- 5,786 FTE jobs;

The main industry sectors impacted by the flow-on from Australian Paper in terms of FTE employment in nationally are:

- Transport, postal and warehousing (483 FTE);
- Personal and other services (397 FTE);
- Professional, scientific and technical services (363 FTE);
- Retail trade (360 FTE); and
- Wholesale trade (289 FTE).

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Victorian Impacts

Aggregating the impacts of operations and capital expenditure in 2015, Australian Paper contributed \$819 million to gross product, \$440 million in household income and 5,576 FTE jobs in Victoria when flow-on effects are taken into account.

In 2015, Australian Paper operations and capital expenditure contributed 0.23 per cent of gross state product, 0.25 per cent of household income and 0.23 per cent of FTE employment in the Victorian economy.

These impacts are summarised in Table 3 below.

Table 3: Economic Impact of Australian Paper in the Victorian Economy, 2015

Aggregated Impacts Victoria	Value Added \$m	Household Income \$m	Employment FTE Jobs
Victoria (including flow-on)	\$819.1	\$440.6	5,576
% of Victoria	0.2%	0.3%	0.2%

Production Value

The Western Research Institute (WRI) has calculated the economic impact of Australian Paper operations at the production level in terms of per tonne and per ream of paper produced in the calendar year 2015. Table 4 below shows the positive impact from purchasing Australian made paper products:

Table 4: Australian Paper per tonne and per ream of paper produced, 2015

Production Value Australia	Value Added \$	Household Income \$
Australian total per tonne of paper produced	\$1,449	\$787
Australian total per ream	\$3.62	\$1.97

One tonne of paper produced contributes \$1,450 in gross domestic product and \$787 to wages and salaries for Australian households. For every 110 tonne of paper produced by Australian Paper this goes on to support 1 full-time equivalent job in the economy.

One ream of paper contributes \$3.62 in gross domestic product into the Australian economy, and \$1.97 in wages and salaries to households.

2. MARYVALE MILL

Australian Impacts

Table 5 below summarises the aggregated economic impacts of Maryvale Mill's operational and capital expenditure made on the national economy. In 2015, the Maryvale Mill contributed \$753 million in gross domestic product, \$359 million in household income and 4,305 full-time equivalent jobs in Australia when flow-on effects are included.

Table 5: Economic Impact of Maryvale Mill Operations and Capital Expenditure on Australia, 2015

Aggregated Impacts Australia	Value Added \$m	Household Income \$m	Employment FTE Jobs
Total Impact (Including Flow-on)	\$753.4	\$359.6	4,305

Victorian Impacts

Maryvale Mill's aggregated impacts contributed \$741 million to gross state product, \$353 million in household income and 4,234 FTE jobs in Victoria when flow-on effects are taken into account.

In 2015, Maryvale Mill operations and capital expenditure contributed 0.2 per cent of gross state product, 0.2 per cent of household income and 0.2 per cent of FTE employment in the Victorian economy when flow-on effects were taken into account.

Table 6 summarises the aggregated economic impact of Maryvale Mill operations and capital expenditure in Victoria for the 2015 calendar year.

Table 6: Economic Impact of Maryvale Mill Operations and Capital Expenditure on Victoria, 2015

Aggregated Impacts Victoria	Value Added \$m	Household Income \$m	Employment FTE Jobs
Total Impact (Including Flow-on)	\$741.8	\$353.2	4,234
% of Victoria	0.2%	0.2%	0.2%

Latrobe Valley Regional Impacts

Maryvale Mill's aggregated economic impacts for the Latrobe Valley region contributed \$451 million in gross regional product, \$216 million in household income and 2,387 full-time equivalent jobs to the local economy.

Table 7 overleaf summarises the aggregated impacts and the equivalent contributions as a percentage of the Latrobe Valley economy. Maryvale Mill's economic impact contributes 6.8 per cent of Latrobe Valley gross regional product, 7.9 per cent of household income and 5.5 per cent of jobs to the local economy in 2015.

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Table 7: Economic Impact of Maryvale Mill Operation and Capital Expenditure on the Latrobe Valley region, 2015

Aggregated Impacts Latrobe Valley	Value Added \$m	Household Income \$m	Employment FTE Jobs
Latrobe Valley (including Flow-on)	\$451.9	\$216.5	2,387
% of Latrobe Valley	6.8%	7.9%	5.5%

The main industry sectors that benefitted from flow-on employment in the Latrobe Valley region, as a result of the Maryvale Mill, were:

- Agriculture, Forestry and Fishing (197 FTE);
- Electricity, gas, water and waste services (182 FTE);
- Personal & Other Services (135 FTE);
- Health and community services (126 FTE); and
- Transport, Postal and Warehousing (125 FTE).

3. DE-INKING PLANT (DIP)

Victorian Impacts

DiP's aggregated impacts contributed \$71 million to gross state product, \$17 million in household income and 218 FTE jobs in Victoria when flow-on effects are taken into account.

Table 8 below summarises the aggregated economic impact of DiP operations and capital expenditure in Victoria for 2015.

Table 8: Economic Impact of DiP Operations and Capital Expenditure on Victoria, 2015

DiP Aggregated Impacts Victoria	Value Added \$m	Household Income \$m	Employment FTE Jobs
Victoria (including Flow-on)	\$71.5	\$17.2	218

Latrobe Valley Regional Impacts

DiP's aggregated operational and capital expenditure impacts contributed \$49 million to gross regional product, \$6 million in household wages and 82 FTE jobs to the Latrobe Valley economy when flow-on effects are taken into account.

Table 9 below summarises the aggregated economic impact of DiP operations and capital expenditure in the Latrobe Valley region for the 2015 calendar year, included is DiP's operational and capital expenditure contribution represented as a proportion of Latrobe Valley's economy. DiP contributes 0.7 per cent to gross regional product, 0.2 per cent to household income and 0.2 per cent of FTE employment to the Latrobe Valley economy when flow-on effects are taken into account.

Table 9: Economic Impact of DiP Operations and Capital Expenditure on the Latrobe Valley Region, 2015

DiP Aggregated Impacts Latrobe Valley	Value Added \$m	Household Income \$m	Employment FTE Jobs
Latrobe Valley (including Flow-on)	\$49.1	\$6.6	82
% of Latrobe Valley Economy	0.7%	0.2%	0.2%

The main industry sectors impacted by the flow-on from the DiP operations in terms of FTE employment in the Latrobe Valley region were:

- Personal and other services (4 FTE);
- Electricity, gas, water and waste services (3 FTE);
- Health and community services (2 FTE);
- Retail trade (2 FTE); and
- Hospitality Services (3 FTE).

4. PRESTON OPERATIONS

Located in Preston in the northern suburbs of Melbourne, Australian Paper's Preston manufacturing facility is the largest envelopes and stationery manufacturer in Australia. Using paper sourced largely from Australian Paper owned paper mills, Preston has the capability to manufacture 2.1 billion envelopes per year servicing the mailing needs of Australian businesses through custom designed, commercial and retail mailing products.

The economic contribution of operations based in Preston has been estimated based on operational and capital expenditure made in the calendar year 2015. Impacts have been measured at the state level.

Victorian Impacts

Table 10 below shows the aggregated economic impacts of Preston operations and capital expenditure in Victoria for the year 2015. Contributions were \$178 million in gross state product, \$9 million in household income and 109 full-time equivalent jobs to the Victorian economy when flow on effects are taken into account.

Table 10: Economic Impact of Preston Operations and Capital Expenditure on Victoria, 2015

Preston Aggregated Impacts Victoria	Value Added \$m	Household Income \$m	Employment FTE Jobs
Victoria (including Flow-on)	\$178.3	\$9.1	109

The main industry sectors impacted by the flow-on from Preston operations in terms of FTE employment in the state of Victoria were:

- Transport, postal and warehousing (15 FTE);
- Professional, scientific & technical services (6 FTE);
- Retail trade (6 FTE);
- Accommodation, cafes and restaurants (4 FTE); and
- Finance and insurance (4 FTE).

CONTRIBUTION TO GOVERNMENT

Australian Paper is a significant contributor to the revenues of government. In this analysis, WRI has examined the data provided by Australian Paper and has provided calculations that represent the contribution to government revenues by each ream of paper produced for the calendar year 2015.

In order to account for flow-on effects to the broader economy, associated with taxes paid and expenditure by Australian Paper, its employees and contractors, WRI has used multipliers generated from the economic impacts previously presented in this report.

Estimates of government revenue per ream of paper manufactured by Australian Paper

WRI has included the following items in the calculation of government revenue per ream of paper (due to operational expenditure):

- Salaries and wages in Australian Paper, as well as salaries and wages in the rest of the economy;
- Superannuation paid to Australian Paper employees, plus superannuation paid in the rest of the economy;
- Personal GST paid by Australian Paper employees plus personal GST paid as a result of indirect effects;
- Excises paid by Australian Paper and outside contractors;
- Payroll tax and fringe benefit taxes paid by Australian Paper and by other firms as a result of indirect effects;
- Property rates and taxes, EPA and other licenses, and import duties;
- Purchases of inputs (water, timber, gas, calcium carbonate and starch) from government owned bodies; and
- Rates paid to HVP.

Australian Paper contributed approximately \$156 million in government payments (excluding indirect taxes or flow-on effects) in 2015.

Calculations by WRI

A due diligence report was undertaken in 2013 of Australian Papers contribution to government revenues per ream of paper by WRI. WRI has followed a similar approach in calculating the effects associated with expenditure by workers/employees of government owned bodies, where Australian Paper sources its inputs. In the due diligence report this was achieved by considering income taxes paid by these workers and employees (assumed to be 30 per cent of taxable income), taxes on superannuation contribution (the latter assumed to be 11 per cent of salaries/wages), and associated flow on effects (based on government sector multiplier of 2.26).

WRI has examined additional government revenues per ream of paper attributable to capital expenditure by Australian Paper for the corporate and IT division, Preston operations, Shoalhaven, Maryvale Mill and De-inking Plant. The estimates were based on salaries and wages data provided by Australian Paper, and assumptions about personal GST as a proportion of salaries and wages (assumed to be similar to operation

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expenditure case), income tax (30%), superannuation contributions (9%), and household income multiplier (3.49). Due to the likely use of contract labour in capital expenditure, payroll taxes, FBT and WorkCover payments were not included in calculations. Similarly to operational expenditure, company GST was not considered either.

The direct and flow-on taxes occurring for operations and capital expenditure in Australia and Victoria are calculated and presented in Tables 11 and 12.

Compensation of employees

Australian Paper provided WRI with wages and salary data for all employees and staff for the calendar year 2015. The value of wages and salaries was \$132.96 million.

Personal GST

According to the Due Diligence Analysis undertaken by WRI in July 2013 the following assumptions have been made in calculating personal Goods and Service Tax (GST) attributable to expenditure by its employees and workers:

- Disposable income was 70 per cent of the total value of wages and salaries (i.e. was equivalent to wages and salaries net income tax);
- 50 per cent of the disposable income of its employees and workers was expended on items that attract GST, i.e. certain items, such as mortgage repayments, were excluded from GST calculation; and
- The GST rate is 10 per cent of the value of expenditure on items attracting GST.

Australian Paper has supplied total wage and salary data of its employees and workers. Personal GST attributable stands at \$4.65 million for the 2015 calendar year.

Employee Withholdings

Australian Paper has supplied all data relating to the amount of Pay As You GO (PAYG) withheld for 2015. The total value of PAYG contributed to the Federal Government by Australian Paper was \$41.6 million.

Superannuation Contributions and tax liability

Australian Paper has provided superannuation data for the 2015 calendar year. Australian Paper contributed \$11.8 million in superannuation to its staff and employees. A total of \$1.77 million was paid in superannuation tax for the year 2015, indicating a superannuation liability tax rate of 15 per cent.

Fuel Excise

Australian Paper has provided estimates of the amount of diesel consumed in 2015 for the purpose of logistics etc. Data from the Australian Tax Office regarding fuel excise rates and fuel tax credit rates was used to calculate the net taxation revenue generated per litre of fuel used. In total, it was estimated that in 2015 Australian Paper indirectly contributed approximately \$764,746.50 in fuel excise payments, net of fuel tax credits.

Income tax

Australian Paper has supplied actual wages paid and actual Pay As You Go (PAYG) Withholding tax liability information for the 2015 calendar year. WRI has calculated the income tax rate to be 31.3 per cent for all of Australian Paper, including Preston Mill, Maryvale Mill and De-Inking Plant operations.

Environmental Protection Agency (EPA) and other licenses

Australian Paper has provided WRI with data relating to information on the EPA and other licenses obtained during the 2015 calendar year. The total value of expenditure on licenses in 2015 was \$727,864.

Property rates and taxes and import duties

Australian Paper has provided WRI with data relating to expenditure made towards land taxes paid and local government rates. The total value of expenditure on these items in 2015 came to \$1.85 million.

The value of import duties paid in the 2015 calendar year was \$88,400.

Payroll tax, fringe benefit tax, and WorkCover payments

Australian Paper has provided WRI with actual figures of payroll tax, fringe benefit tax and WorkCover payments made in the 2015 calendar year:

- The value of payroll tax was \$7.47 million;
- The value of fringe benefit tax was \$1.43 million; and
- The value of WorkCover payments was \$0.25 million.

Purchases from government and government-owned organisations

Australian Paper has provided WRI with expenditure data relating to purchases of timber and timber products from VicForests (\$39.57 million), and water purchased from Gippsland Water (\$4.93 million) in the 2015 calendar year giving a total value of \$44.5 million made in purchases from government and government-owned organisations.

Gas, calcium carbonate and starch inputs

Australian Paper has provided expenditure amounts relating to natural gas purchases (\$29.29 million), calcium carbonate (\$10.02 million) and starch inputs (\$10.34 million) giving a total value of \$49.66 million in the 2015 calendar year.

HVP Plantation rates

Melbourne based Hancock Victorian Plantation (HVP) is one of Australia's largest private plantation companies. HVP's mission is to, "manage the plantation estate in a safe and sustainable way to optimise the return to our investors, whilst balancing the needs of our employees, customers and local communities".²

² Hancock Victoria Plantation (HVP), <http://www.hvp.com.au/about-hvp/> accessed 12.9.16

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Australian Paper has provided the actual annual HVP rates bill for Gippsland where Australian Paper purchases 64 per cent of the annual wood harvest is \$1.5 million for the calendar year 2015.

Capital Expenditure

Australian Paper has provided capital expenditure made in 2015. Estimated labour and material components totalled \$29.5 million with labour consisting of \$7 million and materials at \$22.5 million.

Multipliers

Multipliers measure the relationship between the direct and indirect contributions of each industry at regional or economy wide levels and indicate the relative magnitude of the flow-on effects of each industry compared to the direct effect of that industry (i.e. a multiplier of 1.5 indicates that for every \$1 of direct impact there will be \$0.50 in flow-on effects).

With regard to multipliers:

- In the calculation of government revenue per ream of paper, WRI has used household income and wages multiplier in quantifying the indirect effects of Australian Paper operations;
- The indirect effects were not included for purchases of water, timber and inputs of gas, calcium carbonate and starch. The application of a multiplier to these items would be essentially double counting; and
- For items such as payroll tax, fringe benefit tax (FBT) and company GST, the applied multiplier should be smaller than the multiplier applied to salaries and wages (approximately 50 per cent of the original household multiplier). This is due to a significant number of suppliers in the first round, industrial support and consumption induced category will be small operations that do not pay fringe benefits tax, payroll tax or much company GST.

Conclusion

Including indirect effects, WRI has determined the estimated government revenue contribution by Australian Paper nationally to be \$452 million. This is equivalent to a given value of \$753 per tonne or \$1.88 per ream of paper in 2015.

The value of contributions to government revenue made in Victoria is calculated to be \$439 million or equivalently \$732 per tonne or \$1.83 per ream of paper produced.

Ninety seven per cent of government revenue contributions (including indirect effects) from Australian Paper is made locally reinforcing the value of Australian Paper's impact to the state of Victoria.

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Table 11: Calculations of government revenue per ream of paper- Australia, 2015

Contribution to Government Revenues- Australia	Expenditure by Australian Paper (\$mIn)	Taxes paid (\$mIn)	Indirect effects (\$mIn)	Taxes (due to indirect effects), \$mIn	Total paid to government (\$mIn)
Salaries and wages	139.98	43.73	486.71	146.01	189.75
Superannuation	12.43	1.86	36.42	5.46	7.33
Personal GST		5.80		20.21	26.01
Payroll tax		7.47		13.02	20.49
FBT		1.44		2.51	3.95
Workcover		0.26			0.26
Property rates and taxes		1.06			1.06
Import duties		0.88			0.88
EPA and other licenses		0.73			0.73
Materials	22.56	2.26	26.78	2.68	4.93
	Australian Paper Inputs		Outside contractors		
Transport costs			60.54		
-Fuel costs (*)	2.95		20.28		
-Fuel excise (net) \$/litre	0.40	0.76	-	4.55	5.31
VicForest Timber Products	39.58	11.87	89.44	26.83	78.28
Superannuation (VicForests)	-	0.65	-	1.48	2.13
Gippsland Water	4.93	1.48	11.15	3.34	9.76
Superannuation (Gippsland Water)	-	0.08	-	0.18	0.27
HVP Plantation Rates	1.50	0.45	3.39	1.02	2.97
Gas, Calcium Carbonate and Starch inputs	49.67	14.90	112.24	33.67	98.24
TOTAL					452.34
				Paper produced (tonnes)	600,433
				Government revenue per tonne	\$753.35
				Government revenue per ream	\$1.88
Company GST		64.06		111.66	
Household income multiplier = 3.49 The household income multiplier applicable to inputs (VicForests, Gippsland Water) = 2.260 Multiplier applicable to Payroll, FBT and company GST = 1.74 Income tax = 30% Superannuation contribution = 9% Contribution tax = 15% Personal GST is calculated based on a proportion					

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Table 12: Calculations of government revenue per ream of paper-Victoria, 2015

Contribution to Government Revenues- Victoria	Expenditure by Australian Paper (\$mIn)	Taxes paid (\$mIn)	Indirect effects (\$mIn)	Taxes (due to indirect effects), \$mIn	Total paid to government (\$mIn)
Salaries and wages	133.51	40.054	464.16	139.25	179.30
Superannuation	11.86	1.778	34.75	5.21	6.99
Personal GST		5.570		19.42	24.99
Payroll tax		7.104		12.38	19.49
FBT		1.370		2.39	3.76
Workcover		0.155			0.15
Property rates and taxes		1.063			1.06
Import duties		0.884			0.88
EPA and other licenses		0.728			0.73
Materials	22.52	2.252	26.72	2.67	4.92
	Australian Paper Inputs		Outside contractors		
Transport costs			60.54		
-Fuel costs (*)	2.95		20.28		
-Fuel excise (net) \$/litre	0.40	0.76	-	4.55	5.31
VicForests Timber Products	39.58	11.87	89.44	26.83	78.28
Superannuation (VicForests)	-	0.65	-	1.48	2.13
Gippsland Water	4.93	1.48	11.15	3.34	9.76
Superannuation (Gippsland Water)	-	0.08	-	0.18	0.27
HVP Plantation Rates	1.50	0.45	3.39	1.02	2.97
Gas, Calcium Carbonate and Starch inputs	49.67	14.90	112.24	33.67	98.24
TOTAL					439.23
				Paper produced (tonnes)	600,433
				Government revenue per tonne	\$731.51
				Government revenue per ream	\$1.83
Company GST		55.64		96.99	
<p>Household income multiplier = 3.49 The household income multiplier applicable to inputs (VicForests, Gippsland Water) = 2.260 Multiplier applicable to Payroll, FBT and company GST = 1.74 Income tax = 30% Superannuation contribution = 9% Contribution tax = 15% Personal GST is calculated based on a proportion</p>					

CONCLUSION

Australian Paper made a significant contribution to the national economy, with the Victorian and regional economy of Latrobe Valley experiencing the greatest impacts in 2015.

National

At the national level, Australian Paper contributed the following from operational and capital expenditure in 2015 when flow-on effects are taken into account:

- \$911 million in gross domestic product;
- \$494 million in household income; and
- 5,786 full-time equivalent jobs.

Maryvale Mill operations and capital expenditure contributed nationally:

- \$753 million in gross domestic product;
- \$359 million in household income; and
- 4,305 full-time equivalent jobs.

Victoria

At the Victorian level Australian Paper's overall operations and capital expenditure contributed:

- \$819 million in gross state product;
- \$440 million in household income; and
- 5,576 full-time equivalent jobs.

Maryvale Mill operations and capital expenditure contributed to Victoria:

- \$741 million in gross state product;
- \$353 million in household income; and
- 4,234 full-time equivalent jobs.

Preston operations and capital expenditure contributed:

- \$178 million in gross state product;
- \$9 million in household income; and
- 109 full-time equivalent jobs.

The De-Inking Plant operations and capital expenditure contributed:

- \$71 million in gross state product;
- \$17 million in household income; and

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- 218 full-time equivalent jobs.

Latrobe Valley

At the Latrobe Valley regional level in 2015 the Maryvale Mill operations and capital expenditure impacts contributed:

- \$451 million in gross regional product;
- \$216 million in household income; and
- 2,387 full-time equivalent jobs.

DiP operations and capital expenditure impacts contributed regionally:

- \$49 million in gross regional product;
- \$6 million in household income; and
- 82 full-time equivalent jobs.

Furthermore, in comparison to the 2012 report it was estimated that the proposed recycling plant operations would contribute 0.13 per cent to the gross regional product of Gippsland-Latrobe Valley region. Australian Paper's De-Inking Plant operations contributed in 2015 an estimated 0.74 per cent in gross regional product exclusively to the Latrobe Valley region.

Australian Paper made significant contributions to government revenues both at the federal and state level in the 2015 calendar year.

Australian Paper contributed approximately \$156 million in direct government receipts (excluding indirect tax effects) this consisted of payments of employee withholding taxes, superannuation tax, payroll tax, property rates and taxes, import duties, EPA and licensing fees, purchases from VicForests and Gippsland Water, HVP rates and flow-on government revenues from gas, calcium carbonate and starch inputs. When including personal GST and indirect tax effects this equates to \$753 per tonne or \$1.88 per ream of paper produced nationally.

APPENDIX 1: INPUT-OUTPUT ANALYSIS

Input-output tables are part of the Australian national accounts. An input-output model provides a very detailed picture of the structure of an economy at a particular point in time. It includes all the transactions that occur during a specific period, usually one year.

The rows of an input-output table show the disposal of the output of an industry to itself and to other industries as well as final demand categories (e.g. exports and household consumption); and

The columns show the origin of inputs into production, whether they are intermediate inputs (i.e. intra- and inter-industry purchases) or primary inputs (e.g. labour and capital).

The main use of input-output tables is economic impact analysis, where the tables are used to estimate the benefits generated by new initiatives on each and every sector of an economy. For example, if there is a change in the purchasing or sales pattern of any industry, the flow on, or multiplier, effects on upstream industries can be calculated. An input-output table is also very useful for estimating the direct and indirect contribution of final demand, as with the expenditure associated with Australia Paper Operations.

One of the main attractions of input-output models is their relative ease of use and the level of detail obtained concerning the structure of the economy. The Australian Bureau of Statistics (ABS) notes the usefulness of input-output tables:

“Input-output tables provide detailed information about the supply and disposition of commodities in the Australian economy and about the structure of, and inter-relationships between, Australian industries. Detailed data on supply and use of commodities, inter-industry flows and a range of derived data, such as input-output multipliers, are provided for economic planning and analysis, and construction of models for forecasting purposes.” (ABS Introduction to Input-Output Multipliers, Cat. 5246.0)

The application of input-output analysis to estimate the economic impact of Australian Paper operations on Australia, Victoria and Gippsland region involves four basic steps:

- Construction of appropriate national, state and regional input-output tables;
- Analysis of the value of expenditure by type (expenditure by visitors and by the facility) and origin (local, imported and total);
- Assessment of final demand impacts from these expenditure categories; and
- Using marginal coefficients to overcome the problem of over-estimation associated with linear coefficients.

The input-output table for this project was extracted from the Australian Bureau of Statistics (ABS) 2012-13 national input-output table using the Generation of Regional Input-Output Tables (GRIT) technique. The national table was adjusted to represent Victoria using detailed ABS data from the 2014-15 publications State Accounts (ABS cat no. 5220.0) and Labour Force, Australia, Detailed Quarterly (ABS cat. no. 6291.0.55.003). Subsequently a regional table was built for the Latrobe Valley Region (aggregated SA3 areas within the Gippsland-Latrobe SA4) using total employment data sourced from the 2011 ABS Census and the proportion FTE and growth rates calculated from the ABS Labour Force Catalogue, Employed Persons by Region, Sex & Industry, using the most appropriate Labour Force Region data (ABS Cat. No. 6291.0.55.003). These adjustments provide base tables for the 2014-15 financial year.

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The GRIT technique derives regional input-output tables from the national input-output table using location quotients and superior data, such as primary survey data, at various stages in the construction of the tables. The GRIT procedure was developed by Associate Professor Guy West and Professor Rod Jensen of the University of Queensland and is the most widely used method of constructing regional input-output tables in Australia. The GRIT method is also widely used in America and Europe.

Note:

An iterative 3 step process³ was applied to calculate the growth rates applied to the SA4 data this included:

- Selecting the most appropriate SA4 (Gippsland – Latrobe) region.
- Determining an aggregate growth rate based on 4 quarter averages for the relevant periods.
- Identifying abnormally high or low growth rates and adjusted based on an analysis of other data in the time series.

GRIT uses a series of non-survey steps to produce a prototype regional table from the national table, but provides the opportunity at various stages for the insertion of “superior data”, in this case data on expenditure obtained for the various components of each event. The system is “variable interference” in that the analyst is able to determine the extent to which they interfere with the mechanical processes by introducing primary or other superior data.

The GRIT system is designed³ to produce regional tables that are:

- Consistent in accounting terms with each other and with the national table;
- Capable of calculations to a reasonable degree of holistic accuracy; and
- Capable of being updated with a minimum effort as new data becomes available.

The final input-output tables were balanced using the RAS technique. The RAS technique is a bi-proportional iterative adjustment method designed to modify a base input-output matrix to fit new row and column totals. The rows and columns are simply adjusted proportionally to the new row and column totals in turn, and the cycle repeated until the actual row and column totals converge to the specified values. After the tables are balanced they are checked to ensure that the final tables are consistent and to identify any large discrepancies.

Marginal Coefficients Model

One of the main limitations of input-output tables is the assumption of linear coefficients. To address this problem and the associated problem of overestimation, the input-output analysis undertaken for the Australian Paper operations incorporates the marginal coefficients model which attempts to overcome the limitations of traditional input-output analysis by removing the assumption of linear coefficients for the household sector. As is well documented in literature, the household sector is the dominant component of multiplier effects in an input-output table so using marginal income coefficients for the household sector only provides a more accurate estimate of the multiplier effects and provides results closer to those of a

³ This same process was applied when constructing the Latrobe Valley regional table from an aggregation of SA3 regions Baw Baw, Latrobe Valley and Wellington.

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computable general equilibrium (CGE) model. This provides more accurate estimates of the significance of impacts associated with Australian Paper operations, than would be possible with traditional input-output analysis.

The impacts are measured in terms of industry value added, gross regional product, household income and full-time equivalent jobs. All impacts are measured in either dollar terms or full-time equivalent employment terms and as a percentage of the regional economy.

Industry Significance

Input-output tables are frequently used to provide estimates of the significance of a particular industry or organisation in terms of its contribution to the economy. This is done by examining the effects of the organisation shutting down and ceasing all economic activities. This method provides an estimate of the level of economic activity that can be attributed to that particular organisation, in this case the Pulp, Paper and Converted Paper Product Manufacturing industry. The Industry Significance approach was used to model the operations of Australian Paper.

Operational data was used to construct a new sector in the input-output table representing the Pulp, Paper and Converted Paper Product Manufacturing within respective economies. Adjustments were made to the original Pulp and Paper Manufacturing sector to reflect this division.

Final Demand

The impact of operational expenditure for warehousing and one-off capital expenditure was estimated as a final demand impact. Specifically, their expenditure was allocated to the relevant sectors to give the estimated impacts of this expenditure including both initial and flow-on effects.

Location quotients

Since expenditure items may not be produced locally, a location quotients matrix was applied in the model. This process effectively removes a proportion of total expenditure that represents expenditure made on imports into the relevant region.

Note: In calculating the economic impact of Australian Paper operations it should be noted that the Australian Bureau of Statistics applies a confidentiality technique to its Census data tables. The technique involves small random adjustments to the data which help prevent the disclosure of any identifiable data⁴.

⁴ For further information about the confidentiality technique adopted by the Australian Bureau of Statistics please refer to the following web address: <http://www.abs.gov.au/websitedbs/censushome.nsf/home/factsheetsccd?opendocument&navpos=450>

WESTERN RESEARCH INSTITUTE

WRI is a regional development research organisation located in Bathurst, New South Wales. WRI holds a wealth of knowledge on employment, business development and investment issues affecting regional Australia. It has worked with Commonwealth, State and Local Governments and industry groups on numerous investment and development programs in regional areas. WRI has strong credentials in business and commercial market consulting and applied economic modelling including input-output analysis, shift-share, agribusiness and regional socio-economic surveys and analysis.

Ms Wendy Mason – General Manager

Wendy joined the WRI team as General Manager from her former position as Head of the Commonwealth Bank Foundation. Wendy comes to the role with extensive management and business development experience, excellent networks, and a substantial track record, in stakeholder relations across the government, financial and not-for-profit sectors; and, experience as a major end-user of research to support best practice outcomes.

She also brings with her formal qualifications in education and psychology from the University of Sydney, a Graduate Certificate in Human Resource Management and Graduate Certificate in Business (Marketing). Wendy also holds an Australian Institute of Company Director's Diploma of Business (Governance).

Ms Danielle Ranshaw – Senior Research Consultant BEc&Fin NSW

Danielle's experience in project management in the information technology sector combined with qualifications in economics and finance provides a solid background for WRI projects. With skills in systems design and development, Danielle has been able to extend WRI's capability in developing robust and increasingly complex systems to support research fieldwork. Additionally, Danielle has extensive experience in business process analysis, performance planning and review, report writing and project planning.

Mr Alistair MacLennan – Senior Research Consultant

BA Political Economy, First Class Honours (UNE)

Having served in a variety of parliamentary, public service and private sector roles, Alistair brings a wealth of research experience to WRI. Alistair has well developed skills in data analysis, economics and

business, and has a wide understanding of government. In addition, Alistair also has experience in policy development in the energy sector, where he engaged with industry, government agencies and NGOs to inform policy. Alistair's experience in engaging with clients, stakeholders and the public assists WRI to fully understand its client's needs and provide tailored research.

Ms Wai Matthews – Research Consultant BBus (Fin/Eco) CSU

With a background in Business Administration and Bookkeeping, Wai brings to WRI strong experience and knowledge in local business operations, management and finance. Wai has great interest in economic issues affecting regional areas which led to her attaining an internship with the NSW Department of Industry as an Economic Analyst. As an intern, Wai has gained a wealth of knowledge and experience in data analytics and reporting as well as a good understanding of government.

Ms Dale Curran – Executive Officer BA ANU

Dale is responsible for all administrative processes at WRI including executive support, finance, and management of the Board of Directors and maintenance of policies. She has worked in a variety of roles at WRI, including Fieldwork Supervisor and Research Assistant, and has worked on several community and business surveys. Dale brings a high level of organisational skill to her role as Executive Officer.

